X-ray scans for nonspecific low back pain

A nonspecific pain?

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Clinical question
In patients with nonspecific low back pain (LBP), do lumbar x-ray scans modify any patient outcome?

Evidence
- A meta-analysis\(^1\) (N=1804) examined 2 magnetic resonance imaging (MRI) and computed tomography (CT) trials and 4 x-ray trials; 0% to 44% of patients had sciatica. The trials were of relatively good quality but there was a lot of heterogeneity (except with pain).
- Short-term and long-term outcomes of pain, function, quality of life, mental health, and patient satisfaction did not differ significantly.
  - Pain at 3 months approached significantly worse with x-ray scan (standard mean difference 0.19, 95% CI -0.01 to 0.39).
- A UK RCT\(^2\) of 421 general practice patients with LBP for 6 weeks or longer found:
  - at 3 months statistically significant differences in—proportion of patients still in pain (74% in x-ray group vs 65%, number needed to harm [NNH]=12),
  - proportion of patients requiring follow-up doctor visits (53% in x-ray group vs 30%, NNH=5), and
  - self-rated health status (lower in x-ray group);
  - after 6 more months the differences were borderline but not statistically significant.
- However, 80% of both groups wanted x-ray scans.
  - Those who received x-ray scans were more satisfied.
  - X-ray scan and clinical findings were not correlated.

Context
- Early MRI and CT also do not improve outcomes.\(^1\)
- An RCT comparing MRI directly with back x-ray scans did not differ significantly.\(^3\)
- Guidelines from Alberta,\(^4\) Europe,\(^5\) and the United States\(^6\) all discourage routine back x-ray scans for nonspecific LBP.
- Nonspecific LBP is LBP without recognizable or known pathology (eg, infection, tumour, osteoporosis, ankylosing spondylitis, fracture, inflammatory process, radicular syndrome, or cauda equina syndrome).\(^4\)\(^6\)
- These results and recommendations do not apply to LBP with suspected specific pathology (eg, progressive neurologic changes). Such patients require further investigation.

Bottom line
In nonspecific LBP, x-ray scans do nothing to improve outcomes and might worsen some (such as pain).

Implementation
Management of back pain is difficult and is complicated by the belief that x-ray scans are necessary to provide reassurance to the patient.\(^7\) As a result, x-ray scans are ordered very frequently for such patients.\(^8\) Because x-ray scans for nonspecific LBP increase physician workload,\(^9\) many trials have been conducted to discourage this practice.\(^10\) Patients should be counseled about the benign nature of the pain and advised to remain physically active.\(^11\) Educational handouts might increase patient satisfaction with back pain consultations.\(^12\) The National Health Service has a handout that clarifies the role of x-ray scans.\(^13\)

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The opinions expressed in this Tools for Practice article are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

References